

IN THE CLAIMS:

Please cancel claims 1, 26, and 45-55, without prejudice or disclaimer, amend claims 2-24, 27-38, 43, and 68 and add new claims 57-79, as follows:

1. (Canceled)
2. (Previously Presented) The assemblies as claimed in claim 57 comprising a separate loading device to collapse the filter assembly, the loading device defining an inlet end and an outlet end, the outlet end being configured for co-operative alignment with the reception space.
3. (Previously Presented) The assemblies as claimed in claim 57 wherein the urging device comprises a stop for engagement with the filter assembly.
4. (Previously Presented) The assemblies as claimed in claim 57 wherein the urging device comprises a stem, the stem having a stop for engaging the abutment of the filter assembly.
5. (Previously Presented) The assemblies as claimed in claim 57 wherein the urging device comprises a handle.
6. (Previously Presented) The assemblies as claimed in claim 2 wherein the loading device is configured to radially compress the filter assembly.

7. (Previously Presented) The assemblies as claimed in claim 6 wherein the loading device comprises a funnel, the inlet end defining a larger cross sectional area than the outlet end.

8. (Previously Presented) The assemblies as claimed in claim 7 wherein the loading device comprises a main support having a funnel-shaped bore formed from a frusto-conical filter assembly receiving portion and a cylindrical portion formed by a loading tube projecting from the main support, the cylindrical portion being aligned with the reception space before loading.

9. (Previously Presented) The assemblies as claimed in claim 7 in which the cone angle of the funnel is between 15° and 65° .

10. (Previously Presented) The assemblies as claimed in claim 9 in which the cone angle is between 35° and 45° .

11. (Previously Presented) The assemblies as claimed in claim 2 wherein the loading device extends into the reception space.

12. (Previously Presented) The assemblies as claimed in claim 2 wherein the loading device extends around the outside of the reception space.

13. (Previously Presented) The assemblies as claimed in claim 57 comprising a tray, the tray comprising a first retainer configured to releasably support the urging device in a disengaged position before delivering the filter assembly into the delivery catheter.

14. (Previously Presented) The assemblies as claimed in claim 13 comprising a second retainer configured to releasably support the loading device in co-operative alignment with the delivery catheter during loading.

15. (Previously Presented) The assemblies as claimed in claim 13 wherein the first and second retainers together include a channel for receiving at least one of the loading device and the delivery catheter and the urging device, and at least one projection on the channel wall projecting inwardly for snap retention of at least one of the loading device and the delivery catheter and the urging device.

16. (Previously Presented) The assemblies as claimed in claim 13 wherein the tray comprises a liquid retaining bath formed by a recess in the tray, the bath having a depth sufficient to accommodate in a totally submerged state the reception space of the delivery catheter and the filter assembly for submerged loading of the filter assembly into the reception space.

17. (Previously Presented) The assemblies as claimed in claim 16 wherein the tray has a catheter holding channel communicating with the bath, the channel

defining a pathway around the tray which supports the delivery catheter in a loading position on the tray.

18. (Previously Presented) The assemblies as claimed in claim 17 wherein the delivery catheter is secured within the channel with a number of retainers spaced-apart along the channel, each retainer comprising two or more associated projections which project inwardly from opposite side walls of the channel adjacent a mouth of the channel, the projections being resiliently deformable for snap engagement of the delivery catheter within the channel behind the projections.

19. (Previously Presented) The assemblies as claimed in claim 17 wherein a ramp is provided at an end of the holding channel communicating with the bath to direct the reception space of the delivery catheter towards a bottom of the bath.

20. (Previously Presented) The assemblies as claimed in claim 19 wherein a support is provided within the bath for supporting the reception space of the delivery catheter above the bottom of the bath.

21. (Previously Presented) The assemblies as claimed in claim 20 wherein said support is a step adjacent the channel.

22. (Previously Presented) The assemblies as claimed in claim 16 wherein the first retainer is provided within the bath.

23. (Previously Presented) The assemblies as claimed in claim 57 comprising a flushing device.

24. (Previously Presented) The assemblies as claimed in claim 23 wherein the flushing device comprises a syringe.

25-26. (Canceled)

27. (Previously Presented) A method as claimed in claim 68 comprising the steps of:

providing a loading device, the loading device defining an inlet end and an outlet end;

aligning the outlet end of the loading device in co-operation with the reception space; and

delivering the filter assembly through the inlet end of the loading device in the expanded state and into the reception space.

28. (Previously Presented) A method as claimed in claim 27 wherein the delivery catheter comprises an internal proximal stop, and the method comprises the step of moving the collapsed filter assembly proximally in the reception space using the

urging device to engage the internal proximal stop and disassociating the loaded delivery catheter from the loading device before removing the urging device.

29. (Previously Presented) A method as claimed in claim 28 wherein the delivery catheter is constrained relative to the loading device before delivery of the filter assembly through the loading device into the reception space, and the method comprises the step of releasing the constraint to facilitate disassociation of the loaded delivery catheter from the loading device.

30. (Previously Presented) A method as claimed in claim 68 wherein the urging device comprises a wire for threading through the filter assembly, and a stop for engaging the abutment of the filter assembly.

31. (Previously Presented) A method as claimed in claim 68 wherein the loading device comprises an elongate neck at the outlet end, and the method comprises the step of at least partially positioning the elongate neck in the reception space before delivering the filter assembly into the reception space.

32. (Previously Presented) A method as claimed in claim 68 wherein the method comprises the step of flushing the filter assembly before delivering the filter assembly into the reception space.

33. (Previously Presented) A method as claimed in claim 68 wherein the method comprises the step of flushing the delivery catheter before delivering the filter assembly into the reception space.

34. (Previously Presented) A method as claimed in claim 28 wherein the delivery catheter comprises an outer catheter tube and an inner catheter tube, the inner catheter tube defining the internal proximal stop.

35. (Previously Presented) A method as claimed in claim 34 wherein both the inner catheter tube and the outer catheter tube are flushed before delivering the filter assembly through the loading device.

36. (Previously Presented) A method of loading an embolic protection filter into a catheter, the method comprising the steps of:-

providing an embolic protection filter, the embolic protection filter being collapsible;

providing a catheter defining a reception space at a distal end of the catheter for receiving the collapsed embolic protection filter, the catheter comprising an internal proximal stop;

providing a loading device to collapse the embolic protection filter, the loading device defining an inlet end and an outlet end;

aligning the outlet end of the loading device with the reception space;

delivering the embolic protection filter through the loading device and into the reception space;

moving the collapsed embolic protection filter towards the reception space to engage said internal proximal stop; and

disassociating the loaded catheter from the loading device.

37. (Previously Presented) A method as claimed in claim 36 wherein the method further comprises the steps of:-

providing an urging device for delivering the embolic protection filter through the loading device and into the reception space; and for engaging the collapsed embolic protection filter with the internal proximal stop; and

removing the urging device after disassociating the loaded catheter from the loading device.

38. (Previously Presented) A method as claimed in claim 37 wherein the urging device comprises a wire for threading through the embolic protection filter, and a stop for engaging the embolic protection filter.

39. (Previously Presented) A method as claimed in claim 36 wherein the loading device comprises an elongate neck at the outlet end, and the method comprises

the step of at least partially aligning the elongate neck with the reception space before delivering the embolic protection filter through the loading device.

40. (Previously Presented) A method as claimed in claim 36 wherein the method comprises the step of flushing the embolic protection filter before delivering the embolic protection filter through the loading device.

41. (Previously Presented) A method as claimed in claim 36 wherein the method comprises the step of flushing the catheter before delivering the embolic protection filter into the reception space.

42. (Previously Presented) A method as claimed in claim 36 wherein the catheter comprises an outer catheter tube and an inner catheter tube, the inner catheter tube defining the internal proximal stop.

43. (Previously Presented) A method as claimed in claim 42 wherein both the inner catheter tube and the outer catheter tube are flushed before delivering the embolic protection filter through the loading device.

44-56. (Canceled)

57. (Previously Presented) A vascular filter assembly and assembly for loading the vascular filter assembly comprising:-

a vascular filter assembly for removing embolic material in body fluid flowing within a vessel, the vascular filter assembly having an expanded state and a pre-deployment collapsed state and comprising:-

- a filter element, the filter element comprising a filter membrane and a filter support frame for the membrane;

- the filter support frame being collapsed in the pre-deployment state and the filter support frame being expanded in the expanded state;

- the filter element having at least one inlet opening at a proximal end of the filter element and a plurality of outlet openings towards a distal end of the filter element, the outlet openings allowing body fluid to flow through the filter element but retaining embolic material within the filter element, and the inlet opening being larger than any of the outlet openings;

- a lumen extending through the filter element from the proximal end of the filter element to the distal end of the filter element; and

- an abutment coupled to the filter element;

a delivery catheter, the delivery catheter including a reception space at a distal end of the delivery catheter for receiving the filter assembly in the pre-deployment collapsed state; and

an urging device delivering the filter assembly into the reception space of the delivery catheter, the urging device being engagable with the abutment in the expanded state of

the filter assembly to assist in collapsing the filter assembly from the expanded state to the collapsed pre-deployment state.

58. (Previously Presented) The assemblies as claimed in claim 57 wherein the lumen extends along a central axis of the filter element.

59. (Previously Presented) The assemblies as claimed in claim 57 wherein the lumen is formed at least in part by a tubular member coupled to the filter element.

60. (Previously Presented) The assemblies as claimed in claim 59 wherein the filter element is fixed to proximal end portion of the tubular member and detached from a distal end portion of the tubular member.

61. (Previously Presented) The assemblies as claimed in claim 59 wherein the tubular member extends substantially the entire length of the filter element.

62. (Previously Presented) The assemblies as claimed in claim 59 wherein the abutment is formed by a distal end portion of the tubular member.

63. (Previously Presented) The assemblies as claimed in claim 59 wherein the abutment is attached to the tubular member.

64. (Previously Presented) The assemblies as claimed in claim 59 wherein the abutment is located proximal of a distal end portion of the tubular member.

65. (Previously Presented) The assemblies as claimed in claim 57 wherein the urging device is a pushing device having a proximal end located distal of the filter assembly, the pushing device configured to provide a pushing force on the filter assembly to assist in collapsing the filter assembly.

66. (Previously Presented) The assemblies as claimed in claim 57 wherein the urging device is a pulling device having a proximal end located proximal of the filter assembly, the pulling device configured to provide a pulling force on the filter assembly to assist in collapsing the filter assembly.

67. (Previously Presented) The assemblies as claimed in claim 57 wherein a portion of the urging device extends through the lumen when collapsing the filter assembly from the expanded state to the collapsed pre-deployment state.

68. (Currently Amended) A method for loading an vascular filter assembly into a delivery catheter prior to deploying the filter assembly in a patient, the method comprising the steps of:-

providing a vascular filter assembly having an expanded state and a pre-deployment collapsed state, the filter assembly comprising:-

a filter element, the filter element comprising a filter membrane and a filter support frame for the membrane;

the filter support frame being collapsed in the pre-deployment state and the filter support frame being expanded in the expanded state;

the filter element having at least one inlet opening at a proximal end of the filter element and a plurality of outlet openings towards a distal end of the filter element, the outlet openings allowing body fluid to flow through the filter element but retaining embolic material within the filter element, and the inlet opening being larger than any of the outlet openings;

a lumen extending through the filter element from the proximal end of the filter element to the distal end of the filter element; and

an abutment coupled to the filter element;

providing a delivery catheter, the delivery catheter including a reception space at a distal end thereof;

providing an urging device;

engaging the urging device with the abutment in the expanded state of the filter assembly; and

using the urging device to move the filter assembly towards the ~~pre-deployment~~ pre-deployment collapsed state and deliver the filter assembly into the reception space in the delivery catheter.

69. (Previously Presented) A method as claimed in claim 68 wherein the lumen extends along a central axis of the filter element.

70. (Previously Presented) A method as claimed in claim 68 wherein the lumen is formed at least in part by a tubular member coupled to the filter element.

71. (Previously Presented) A method as claimed in claim 70 wherein the filter element is fixed to proximal end portion of the tubular member and detached from a distal end portion of the tubular member.

72. (Previously Presented) A method as claimed in claim 70 wherein the tubular member extends substantially the entire length of the filter element.

73. (Previously Presented) A method as claimed in claim 70 wherein the abutment is formed by a distal end portion of the tubular member.

74. (Previously Presented) A method as claimed in claim 70 wherein the abutment is attached to the tubular member.

75. (Previously Presented) A method as claimed in claim 70 wherein the abutment is located proximal of a distal end portion of the tubular member.

76. (Previously Presented) A method as claimed in claim 68 wherein the step of using the urging device to move the filter assembly includes providing a pushing force on the urging device to provide a pushing force on the filter assembly.

77. (Previously Presented) A method as claimed in claim 68 wherein the step of using the urging device to move the filter assembly includes providing a pulling force on the urging device to provide a pulling force on the filter assembly.

78. (Previously Presented) A method as claimed in claim 68 wherein a portion of the urging device extends through the lumen when collapsing the filter assembly.

79. (Previously Presented) A method as claimed in claim 36 wherein further moving of the collapsed embolic protection filter proximally after engaging the internal proximal stop causes said disassociation of the loaded catheter from the loading device.